

REMARKS

Applicants thank the Examiner for the thorough examination given the present application.

Status of the Claims

Claims 1-14 are pending in the above-identified application. In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Provisional Request for Interview

Applicants respectfully request an interview before the issuance of the next Office Action in order to discuss the arguments presented herein. However, should an Office Action be issued without an interview, Applicants respectfully request that the next Office Action be non-final in view of the submission of the enclosed 37 CFR § 1.132 Declaration of Dr. Lutz Brahm discussed below.

Issues under 35 U.S.C. § 102(b)

In the Office Action dated February 11, 2009, claims 1, 6, and 9 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hara et al. (Flower Induction in Asparagus Seedlings by Anilide and Benzamide Derivatives, *J. Agric. Food Chem.*, 40, 1992, pages 1692-1694). In the Advisory Action dated June 17, 2009, the Examiner has indicated that the previous Reply has overcome this rejection.

Issues under 35 U.S.C. § 103(a)

- 1) Claims 1-11 and 14 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Eicken et al. '745 (US 6,143,745).
- 2) Claims 12-13 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Eicken et al. '745 in view of Asrar et al. '371 (US 2003/0060371).

Applicants respectfully traverse. Reconsideration and withdrawal of these rejections are respectfully requested based on the following considerations.

Eicken et al. '745 describe carboxanilide compounds and their use for controlling harmful fungi. However, a growth regulating action is not described. The Examiner asserts that one of ordinary skill in the art would assume that plants in need of treatment against fungi are in need of growth promotion since the plants would be destroyed if the plants are not treated against the harmful fungi.

However, the compounds of formula I are not limited to a pesticidal action for exerting a growth regulating effect. Rather, the compounds of formula I incite or promote plant responses which are completely different from Eicken et al. '745. The present specification states that the growth regulation process means “a variety of plant responses which attempt to improve some characteristic of the plant as distinguished from pesticidal action” (page 1, lines 8-14; emphasis added). The present specification also states that the compounds of formula I may also be applied to the soil, wherefrom they are root-absorbed and result in plant responses which correspond to growth regulation (page 14, lines 37-41). Furthermore, Example 1 proves that the growth regulating effect was achieved, as compared to untreated onion plants, although no fungal diseases were present (page 15, lines 4-13).

In other words, according to Eicken et al. '745, the compounds described therein are only applied to the plants when there is a current or expected pest pressure. Specifically, Eicken et al. '745 only disclose the use of the compounds described therein only for the treatment of phytopathogenic fungi. In the method of the present invention, the carboxamides are also applied to the plants when there is no expected pest pressure because the expected benefits of improved growth are completely different from the control of fungi. This effect is completely independent from the fungicidal activity and occurs when there is no fungal pressure. If the growth promoting effect was only due to the fungicidal activity of the compounds I, no growth promotion would have been observed when there was no fungal pressure and, thus, no biotic stress.

The fact that the growth promoting properties of the compounds of formula I are independent from the fungicidal activity has been proven in the examples of the present specification. In all of the examples, none of the plants (i.e., neither the plants treated with boscalid or boscalid/pyraclostrobin, nor the untreated control plants) were under fungal pressure, or the fungal pressure was very low, simply because no pathogens were around. Thus, the different crop yields (Examples 1-4) and the different appearance of the plants (Example 4) can only be ascribed to an effect of boscalid, which has nothing to do with its fungicidal activity.

In order to further support this point, enclosed herewith is a 37 CFR § 1.132 Declaration of Dr. Lutz Brahm. The Examiner is respectfully requested to review the enclosed Rule 132 Declaration of Dr. Lutz Brahm as it provides strong evidence of the patentability of the present invention.

In the enclosed Declaration, further experimental data are set forth, which describe the treatment of wheat with boscalid. The thousand grain wheat given in the examples is directly proportional to the grain size and, thus, corresponds to the growth regulating effect a) in claim 6. The straw yield given in Example 1 is proof of an increased shoot growth (growth regulating effect o) in claim 6). The plant height given in Example 3 is proof of the growth regulating effect j) in claim 6.

These results are not based on a fungicidal effect of boscalid because all experiments were carried out under virtually pathogen-free conditions, i.e., neither the untreated control plants nor the treated plants were under biotic, specifically fungal stress. Thus, the growth regulating effect of boscalid is due to a biological activity of this substance different from its fungicidal action.

For the reasons given above, one of ordinary skill in the art would apply the method of Eicken et al. '745 only if a plant is infected by a phytopathogenic fungus. In stark contrast, the present invention claims a method that the compound of formula I be applied independently of whether there is an infection pressure or not.

As discussed above, Eicken et al. '745 do not disclose each and every aspect of the pending claims. Specifically, Eicken et al. '745 fail to teach the growth regulating action of the compounds of formula I of the present invention. Regarding the second rejection under 35 U.S.C. § 103, Applicants respectfully submit that Asrar et al. '371 do not overcome the deficiencies of this reference.

To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, Eicken et al. '745 with or without Asrar et al. '371 fail to disclose all of the claim limitations of independent claim 1, and those claims dependent thereon. Accordingly, the combination of references does not render the present invention obvious. Furthermore, the cited references or the knowledge in the art provide no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejections is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

CONCLUSION

A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case clearly indicating that each of claims 1-14 are allowed and patentable under the provisions of title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Reg. No. 58,258 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: July 13, 2009

Respectfully submitted,

By 
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Attachment: 37 CFR § 1.132 Declaration of Dr. Lutz Brahm

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
BUBERL et al.)
)
Serial No. 10/568,510)
) Group Art Unit: 1616
Filed: February 16, 2006)
) Examiner: Kristie Latrice Brooks
)

For : Method of plant growth promotion using amide compounds

DECLARATION

1. I, Lutz Brahm, Dr. agr., a citizen of the Federal Republic of Germany and residing at Am Hang 16, 67551 Worms, Germany, hereby declare as follows:

I am a fully trained agronomist having studied agriculture at the Justus-Liebig University of Giessen, Germany, from 1987 to 1993. I received a Diploma Degree in 1993 by the Justus-Liebig University of Giessen, Germany. In 1997, I received the doctorate degree (Ph.D.) by the Justus-Liebig University of Giessen, Germany.

I joined BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany, in 2006. Since then, I have been working in the field of crop protection. I have read and fully understood US application Ser. No. 10/568,510 and I am familiar with the subject-matter disclosed and claimed therein;

2. I have read and fully understood the Office Action of February 11, 2009 and the references cited therein by the Examiner;
3. The following observations are made by me.

4. Supplementary Experimental Data

4.1 In order to provide further support for the claimed method, following additional test data are presented.

Example 1

Mitcherlich pots of known weight were filled with 5.5 kg of sandy dry soil (pH 6.8) and fertilized (P, K and Mg) to optimal growing conditions. The culture was spring wheat (cv. Passat); 12 plants per pot. The experiment was conducted with 6 replications in a vegetation hall. Experiments were carried out under semi controlled conditions at very low disease-pressure with insignificant infection rates, protected from any undesired rain or water impact. The water consumption of each pot was calculated on the basis of the recorded measurements of the weight of the pots prior to each irrigation event up to the defined set point.

Nitrogen fertilizer (totally 1.75 g N/pot) was added in equal amounts at 3 stages to allow optimal growth conditions throughout the life cycle. All plants/pots were grown at optimal water supply by watering 2-3 times a day to 60% of the water holding capacity of the soil.

Boscalid (50% a.i., 600g in 400 l water/ha) was applied at growth stage 39/49 (BBCH scale) as Cantus® of BASF SE, which is a commercial WG formulation of Boscalid. Control plants were not treated.

After ripening of the plants the grain was harvested and uniformly dried to 5% moisture content. Straw yield was determined and the number of halms with ear per pot was counted at maturity. Number of grains per pot was counted after harvest. Thousand grain weight was calculated based on grain yield per pot and number of grains per pot.

Results:

Table 1

Treatment	Number of Halms with Ear/Pot	Thousand Grain Weight (g)	Straw Yield (g/pot)	Grain Yield/Pot (g/pot)
Untreated	32.3	31.4	65.9	59.8
Boscalid	35.2	32.2	67.3	62.7

Results in table 1 illustrate that Boscalid modifies growth of wheat plants in a way that more halms with ears are established. This promotion of plant shoot growth can also be seen in the increase in straw yield. Together with the number of grains that are formed per ear and the grain weight, which is shown to be increased by Boscalid in the example given, the number of halms with ears is determining the final grain yield of a cereal crop. Thousand grain weight in cereals is positively correlated to grain size. The increase in straw yield demonstrates the improvement in plant shoot growth.

Example 2

Spring wheat (cv. Passat) was cultivated in Mitcherlich pots as described above in example 1. The experiment was conducted with 6 replications in a vegetation hall. Experiments were carried out under semi controlled conditions at very low disease-pressure with insignificant infection rates, protected from any undesired rain or water impact. The water consumption of each pot was calculated on the basis of the recorded measurements of the weight of the pots prior to each irrigation event up to the defined set point.

Nitrogen fertilizer (totally 1.75 g N/pot) was added in equal amounts at 3 stages to allow optimal growth conditions throughout the life cycle. All plants/pots were grown at optimal water supply by watering 2-3 times a day to 60% of the water holding capacity of the soil until growth stage 55 (BBCH). Then, pots were only watered to 60% of the maximum water holding capacity of the soil after clear water stress symptoms on the plants were visible to apply severe drought stress.

Boscalid (50% a.i., 600g in 400 l water/ha) was applied at growth stage 39/49 (BBCH scale) as Cantus® of BASF SE, which is a commercial WG formulation of Boscalid. Control plants were not treated.

At maturity of the plants the grain was harvested and uniformly dried to 5% moisture content. Grain yield per pot, grain yield per ear, number of grains per ear and number of grains per pot were determined. Thousand grain weight was calculated based on grain yield per pot and number of grains per pot.

Results:

Table 2

Treatment	Thousand Grain Weight (g)	Single Ear Grain Yield (g/ear)	Number of Grains per Ear	Grain Yield/Pot (g/pot)
Untreated	31.4	1.27	48.27	59.8
Boscalid	32.2	1.34	49.22	62.7

Results in table 2 illustrate that Boscalid modifies growth of wheat plants in a way that more grains per ear are generated with a bigger size (increased thousand grain weight). That resulted in an increased yield per ear and total grain yield (grain yield per pot).

Example 3

Spring wheat (cv. Passat) was cultivated in Mitcherlich pots as described above in example 1. The experiment was conducted with 6 replications in a vegetation hall. Experiments were carried out under semi controlled conditions at very low disease-pressure with insignificant infection rates, protected from any undesired rain or water impact. The water consumption of each pot was calculated on the basis of the recorded measurements of the weight of the pots prior to each irrigation event up to the defined set point.

Nitrogen fertilizer (totally 1.75 g N/pot) was added in equal amounts at 3 stages to allow optimal growth conditions throughout the life cycle. All plants/pots were grown at optimal water supply by watering 2-3 times a day to 60% of the water holding capacity of the soil until growth stage 55 (BBCH). Then, pots were only watered to 30% of the maximum water holding capacity of the soil to apply moderate drought stress.

Boscalid (50% a.i., 600g in 400 l water/ha) was applied at growth stage 39/49 (BBCH scale) as Cantus® of BASF SE, which is a commercial WG formulation of Boscalid. Control plants were not treated.

After heading, plant height was measured. At maturity of the plants the grain was harvested and uniformly dried to 5% moisture content. Number of grains per pot was counted after harvest. Thousand grain weight was calculated based on grain yield per pot and number of grains per pot.

Results:

Table 3

Treatment	Plant Height (cm)	Thousand Grain Yield (g)	Grain Yield/Pot (g/pot)
Untreated	72.5	29.8	54.0
Boscalid	74.0	31.4	55.0

Boscalid increased plant height and grain size (grain weight). This promotion of plant growth resulted finally in a higher yield.

5. The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1101 of Title 18 of the US-code and that such willful false statements may jeopardize the validity of the above-identified patent issued thereon.

Ludwigshafen, July 8, 2009



(Lutz Brahm)